

I CLAIM:

1. A magazine for a powered nail-driving tool which defines a stroke path in an axial direction along which a nail that is fed thereinto is impacted, said magazine being
5 capable of accommodating stacked multiple layers of a plurality of nails arranged in tandem, said magazine comprising:

a feeding tray which includes a standby zone adapted to support a lowermost one of layers of nails that are to
10 be fed into the stroke path, and a retreat zone opposite to said standby zone in a longitudinal direction, said feeding tray being adapted to be secured to the powered nail-driving tool such that the longitudinal direction is radial to the axial direction, and such that said standby
15 zone and said retreat zone are respectively proximate to and distal from the stroke path, said standby zone extending to terminate at a feeding front edge that is adapted to stop short of the stroke path, said feeding tray further including a loading zone which is adapted to
20 receive the lowermost one of the layers of nails, which is interposed between said standby zone and said retreat zone, and which has placement and holding areas opposite to each other in the axial direction;

a gate member which is slidably disposed on said feeding
25 tray, and which is displaceable among said standby zone, said loading zone and said retreat zone such that displacement of said gate member from said loading zone

to said retreat zone in a retracting course permits loading of the lowermost one of the layers of nails into said loading zone, said gate member including pushing and connecting ends opposite to each other in the longitudinal direction, said pushing end being adapted to urge the lowermost one of the layers of nails towards said feeding front edge once loading on said loading zone is completed;

a pull member disposed to pull said gate member from said standby zone through said loading zone to said retreat zone;

a biasing member disposed to bias said gate member towards said standby zone to thereby urge a leading one of the nails in the lowermost one of the layers of nails into the stroke path;

a nail-supplying member disposed over said feeding tray, and having upper and lower wall surfaces opposite to each other in a transverse direction transverse to the axial and longitudinal directions, said upper wall surface defining a stacking opening which extends downward through said lower wall surface so as to be communicated with said feeding tray, which is adapted to accommodate the stacked multiple layers of nails, and which is registered with said loading zone so as to form a lowering path in the transverse direction; and

a separating member which is interposed between said nail-supplying member and said gate member, and which is movable relative to said nail-supplying member in the

longitudinal direction, said separating member being disposed to couple with said gate member so as to be moved therewith in an advancing course, where said gate member is displaced from said loading zone to said standby zone to urge the lowermost one of the layers of nails to said standby zone, and in the retracting course of said gate member, said separating member being configured such that during the retracting course of said gate member, said separating member is brought to move with said gate member away from said lowering path to said retreat zone, and such that during the advancing course, said separating member is brought to move with said gate member so as to slide underneath and support the remaining layers of nails in place of said gate member that supports the remaining layers of nails when in said loading zone.

2. The magazine of Claim 1, further comprising a nail-depressing member which is disposed on said nail-supplying member and which is adapted to depress the stacked multiple layers of nails accommodated in said stacking opening in the transverse direction.
3. The magazine of Claim 2, wherein said feeding tray is formed with an elongated channel that is elongated in the longitudinal direction and that includes said standby zone, said loading zone and said retreat zone, said gate member being slidable along said elongated channel.
4. The magazine of Claim 3, wherein said separating member is formed as a plate, and has a plurality of keyways which

- extend in the longitudinal direction and each of which has first and second limit ends respectively proximate to and distal from said feeding front edge, said connecting end of said gate member having a plurality of
5 keys which are disposed in and which are slidable along said keyways, respectively, such that when said gate member is in said standby zone, said keys reach said first limit ends of said keyways and said separating member is disposed underneath said stacking opening, and such that
10 during the retracting course of said gate member, said keys reach said second limit ends of said keyways and said separating member is moved with said gate member away from said stacking opening so as to permit the remaining layers of nails on said separating member to move into said
15 loading zone along the lowering path.
5. The magazine of Claim 6, wherein said separating member has a front edge portion which is adjacent to said first limit ends of said keyways and which has a plurality of slide inclinations that are inclined from said front edge
20 portion towards said elongated channel so as to facilitate movement of the remaining layers of nails along the lowering path.
6. The magazine of Claim 3, wherein said separating member has an engaging protrusion which protrudes towards said
25 elongated channel and which is configured to engage said connecting end of said gate member so as to be moved with said gate member in the advancing and retracting courses.

7. The magazine of Claim 3, wherein said pull member includes a plurality of connecting rods, each having a first rod end secured to said connecting end of said gate member, and a second rod end extending in the longitudinal direction outwardly of said retreat zone, and an operating block connected to said second rod ends of said connecting rods so as to be operable to pull said gate member towards said retreat zone against biasing action of said biasing member.
8. The magazine of Claim 7, wherein said biasing member includes a plurality of springs surrounding said connecting rods, respectively, and disposed between said connecting end of said gate member and said retreat zone to bias said gate member towards said standby zone.
9. The magazine of Claim 8, wherein said gate member includes a plurality of gate plates extending in the longitudinal direction so as to be connected to said first rod ends of said connecting rods, respectively, and to be biased by said springs, respectively.
10. The magazine of Claim 2, wherein said nail-depressing member includes a cover plate which is mounted on said upper wall surface of said nail-supplying member and which covers said holding area, a depressing plate which is spaced apart from and which is movable relative to said cover plate in the transverse direction, a biasing member disposed between said cover plate and said depressing plate to bias said depressing plate towards said holding

area so as to abut against the stacked layers of nails in said stacking opening, and a pulling plate which is coupled with said depressing plate to pull said depressing plate away from said holding area against
5 biasing action of said biasing member for facilitating filling of the nails into said stacking opening.

11. The magazine of Claim 10, wherein said nail-depressing member further includes a partition plate which is disposed in said stacking opening to partition said
10 stacking opening into two chambers that are opposite to each other in the axial direction and that are adapted to accommodate nails of different lengths.

12. The magazine of Claim 10, wherein said nail-supplying member has an inner peripheral wall extending between
15 said upper and lower wall surfaces and defining said stacking opening, said inner peripheral wall having a guiding wall surface which extends from said cover plate toward said holding area and which is distal from said placement area in the axial direction, said guiding wall
20 surface having an abutment region which is inclined towards said holding area such that during loading of the lowermost one of the layers of nails into said loading zone, the remaining ones of the layers of nails are successively shifted back against said abutment region
25 following inclination of said abutment region while being under the pressure of said depressing plate, thereby stabilizing stacking of the layers of nails.